

ABSTRACT

Disclosed is a rapid and facilitated method of producing from a parental template
5 polynucleotide, a set of mutagenized progeny polynucleotides whereby at each original codon
position there is produced at least one substitute codon encoding each of the 20 naturally
encoded amino acids. Accordingly, there is also provided a method of producing from a parental
template polypeptide, a set of mutagenized progeny polypeptides wherein each of the 20
naturally encoded amino acids is represented at each original amino acid position. The method
10 provided is termed site-saturation mutagenesis, or simply saturation mutagenesis, and can be
used in combination with other mutagenization processes, such as, for example, a process
wherein two or more related polynucleotides are introduced into a suitable host cell such that a
hybrid polynucleotide is generated by recombination and reductive reassortment. Also provided
are vector and expression vehicles including such polynucleotides, polypeptides expressed by the
15 hybrid polynucleotides and a method for screening for hybrid polypeptides.